Team Saarland: Safety form

1. Your Training

a) Have your team members received any safety training yet?

- Yes, we have already received safety training

b) Please briefly describe the topics that you learned about (or will learn about) in your safety training.

- Safe working in the Lab (no eating, no drinking, no smoking,...)
- Necessary protection of ourselves (gloves, closed shoes, long trousers, lab coat, googles), dependent on the handled chemicals (for exmaple nitril gloves or latex gloves)
- Necessary protection of the society, and the environment by work with GRAS organisms
- How to transport genetically manipulated Organisms
- How to behave in the case of an fire or emergency
- Specific aspects concerning our project

c) Please give a link to the laboratory safety training requirements of your institution (college, university, community lab, etc). Or, if you cannot give a link, briefly describe the requirements.

- http://neurobiologie.uni-saarland.de/e/

2. Your Local Rules and Regulations

a) Who is responsible for biological safety at your institution? (You might have an Institutional Biosafety Committee, an Office of Environmental Health and Safety, a single Biosafety Officer, or some other arrangement.) Have you discussed your project with them? Describe any concerns they raised, and any changes you made in your project based on your discussion.

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b) What are the biosafety guidelines of your institution? Please give a link to these guidelines, or briefly describe them if you cannot give a link.

- http://www.uni-saarland.de/campus/service-und-kultur/dienstleistungen-fuer-beschaeftigte/amt-fuer-arbeits-und-umweltschutz/arbeitsschutz/biotechnologie.html
- This website links to the Office for Environmental protection and workplace safety. They describe the guidelines of our institution regarding biosafety, labsafety and working protection.

c) In your country, what are the regulations that govern biosafety in research laboratories? Please give a link to these regulations, or briefly describe them if you cannot give a link.

- http://www.gesetze-im-internet.de/biostoffv_2013/index.html
- http://www.gesetze-im-internet.de/gentsv/index.html

3. The Organisms and Parts that You Use

4. Risks of Your Project Now

Please describe risks of working with the biological materials (cells, organisms, DNA, etc.) that you are using in your project. If you are taking any safety precautions (even basic ones, like rubber gloves), that is because your work has some risks, however small. Therefore, please discuss possible risks and what you have done (or might do) to minimize them, instead of simply saying that there are no risks at all.

a) Risks to the safety and health of team members, or other people working in the lab:

- Most of our safety precautions are necessary to protect our desired product against contamination and degradation, therefore we generally wear lab coats and rubber gloves. In some cases like for example gelelectrophoresis we protect ourselves not only by these measures but also with safety glasses against contamination with hazardous agents like ethidium bromide.

b) Risks to the safety and health of the general public (if any biological materials escaped from your lab):

- There is no risk for the health of the general public, but our Bacillus strain might be able to survive in the natural soil environment. Although the chance of surviving is reduced due to several knock outs in our baciilus strain.

c) Risks to the environment (from waste disposal, or from materials escaping from your lab):

- No risks, all the waste is being autoclaved before disposal. Transfer of our DNA constructs to other microorganims is not critical as no pathogensis factors are encoded.

d) Risks to security through malicious mis-use by individuals, groups, or countries:

- Currently no risks have been described in context of the naked mole rat hyaluronic acid.

e) What measures are you taking to reduce these risks? (For example: safe lab practices, choices of which organisms to use.)

- We are only using microorganisms beloging to risk group S1. Furthermore we minimize the risks by using PeqGreen instead of ethidium bromide as a DNA dye.

5. Risks of Your Project in the Future

**What would happen if all your dreams came true, and your project grew from a small lab study into a commercial/industrial/medical product that was used by many people? We invite you to speculate broadly and discuss possibilities, rather than providing definite answers. Even if the product is "safe", please discuss possible risks and how they could be addressed, rather than simply saying that there are no risks at all.**

a) What *new* risks might arise from your project's growth? (Consider the categories of risk listed in parts a-d of the previous question: lab workers, the general public, the environment, and malicious mis-uses.) Also, what risks might arise if the *knowledge* you generate or the *methods* you develop became widely available?

- Currently unknown physiological negative effects of the naked-mole rat hyaluronic acid on human cells might occur during further development.

b) Does your project currently include any design features to reduce risks? Or, if you did all the future work to make your project grow into a popular product, would you plan to design any new features to minimize risks? (For example: auxotrophic chassis, physical containment, etc.) Such features are not required for an iGEM project, but many teams choose to explore them.

- Currently our project does not inlcude any safety features.

6. Further Comments

If you are completing a Preliminary Version of your Safety Form, use this space to describe how far you have progressed in your project, and give some comments about any questions that you left blank.

You can also use this space for any other comments or additional material.

- At the moment we are still working on the production of our high-molecluar mass hyaluronic acid. We are planning to characterize its inhibitory effect on carcinogenesis of human cancer cell lines.